

**ADDITIONS TO THE NEOTROPICAL EPYRINAE  
(HYMENOPTERA, BETHYLIDAE), WITH DESCRIPTION OF A NEW  
SPECIES OF *LEPIDOSTERNOPSIS* FROM BRAZIL**

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**ABSTRACT**

*Lepidosternopsis sulcata* sp. n., from northern Brazil is described and illustrated. Additional specimens of *Alongatepyris platunissimus* Azevedo, 1992, *Aspidepyris austrinus* Evans, 1977, *Cephalonomia hyalinipennis* Ashmead, 1893, *C. tarsalis* (Ashmead, 1893), *Plastanoxus laevis* (Ashmead, 1893), *P. westwoodi* (Kieffer, 1914) and *Rhabdepyris viridissimus* (Kieffer, 1911) are examined, and the species variation analyzed and new distribution data added. Male genitalia of *A. austrinus*, *Plastanoxus laevis*, *P. westwoodi* and *Rhabdepyris viridissimus* are first described. *Nothepyrus* Evans, 1973, type species *N. brasiliensis* Evans, 1973, is proposed as junior synonym of *Lepidosternopsis* Ogloblin, 1953. *Epyris surinamensis* Evans, 1969 is transferred to *Rhabdepyris* Kieffer, 1904.

**KEYWORDS.** Bethylidae, Hymenoptera, *Lepidosternopsis*, Neotropical, Systematic.

**INTRODUCTION**

Epyrinae is the richest subfamily of Bethylidae in species and genera as listed in EVANS (1964) for the Americas, and in GORDH & MOCZAR (1990) for the world. Epyrinae contains several generalized genera as *Epyris* Westwood, 1832 and *Rhabdepyris* Kieffer, 1904 as well as some of the most specialized of Bethylidae as *Cephalonomia* Westwood, 1833 and *Scleroderma* Latreille, 1809 (EVANS, 1964). AZEVEDO (1991, 1992a, 1992b, c, 1993, 1994, 1996) have included some new taxa of Neotropical Epyrinae. In the present study, new combinations, new species, additional notes on species variations and distribution data of some Epyrinae are added.

The material examined was provided by the following institutions: AMNH, American Museum of Natural History, USA (J. M. Carpenter & E. Quinter); CNCI, Canadian National Collection of Insects, Canada (J. T. Huber); DCBU, Universidade Federal de

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Main measurements used in this study are as follow: DAO, diameter of anterior ocellus; HE, height of eye; LFW, length of forewing; LH, length of head; OOL, ocello-ocular line; VOL, vertex-ocular line; WF, width of frons; WH, width of head; WOT, width of the ocellar triangle, including the ocelli. The nomenclature of integument follows HARRIS (1979). Terminology generally follows EVANS (1964).

### *Lepidosternopsis* Ogloblin, 1953

*Lepidosternopsis* OGLOBLIN, 1953:101-106; EVANS, 1964:172-173; GORDH & MOCZAR, 1990:132; TERAYAMA, 1995:69-71.

*Nothepyrus* EVANS, 1973:203-204; GORDH & MOCZAR, 1990:135; AZEVEDO, 1992c:562-563; TERAYAMA, 1995:69-71. **Syn. n.**

*Lepidosternopsis* was first described based on several apterous females of *L. kuscheliana* Ogloblin, 1953, type species, from Masatierra Island (Chile), which were reared as ectoparasitoid of the larvae of Coleoptera, Curculionidae *Strongylopterus* Schönherr, 1837 (OGLOBLIN, 1953). EVANS (1964) described two species from Australia based on micropterous females. The genus was known up to now only by non-macropterous female and is easily recognized by the strongly emarginate gastral sternites.

EVANS (1973) proposed the peculiar genus *Nothepyrus* based on the analysis of 11 macropterous females from Santa Catarina, Brazil, which is promptly recognized by the thick head and weakly emarginate gastral sternites. TERAYAMA (1995) presented a cladogram for 9 genera of Sclerodermini based on the analysis of 27 morphological characters, pointing out 12 different character status between *Lepidosternopsis* and *Nothepyrus*. The latter genus was considered as the most generalized genus of the tribe and the former one of the most derived.

Now, I was able to find the first species of *Lepidosternopsis* with macropterous female (two specimens) from Pará, Brazil. The comparison of females of *L. sulcata* sp. n., described below, and *Nothepyrus brasiliensis* Evans, 1973 showed that macropterous species of both genera are very similar to each other, with difference in only one character of those 27 analyzed by TERAYAMA (1995). This difference between them is how much the posterior margin of the gastral sternites is emarginate. So, I regarded *Nothepyrus* as junior synonym of *Lepidosternopsis*, and those three species of *Lepidosternopsis*, the apterous *L. kuscheliana*, and micropterous *L. darlingtoni* Evans, 1964 and *L. niveipennis* Evans, 1964 could be considered as the most derived group if the Terayama matrix were used.

### *Lepidosternopsis sulcata* sp. n.

(Figs. 1-7)

Description, female holotype: length 3mm; LFW 1.75mm.

Color: head dark castaneous, lighter below, mesosoma black, with prothorax and

scutellum dark castaneous; gaster from black basally to dark castaneous apically; antenna, mandible, legs and palpi castaneous; wings hyaline, very weak bifaceate, veins castaneous.

Head (figs. 1, 2): mandible with two apical sharpened teeth, the lower larger (fig. 3). Clypeus with invaginated median lobe, median carina slightly high and concave in profile. First four antennal segments in a ratio of 8:3:2:2, segment XI 1.1 times as long as thick; antennal sockets closed each other, separated by 1.0 time their diameters. Eye with sparse hairs. Frons weakly coriarius, with small punctures, very sparse, separated by 3-5 times their diameters, with a shallow median long groove between the antennal sockets. LH 1.13 x WH; WF 0.5 x WH; WF 0.91 x HE; OOL 0.98 x WOT; DAO 0.38 x WOT; posterior ocelli distant from the vertex 2.1 x DAO. Vertex slightly convex with corner somewhat angled; VOL 0.73 x HE. Head globoid, not flattened, its thickness 0.69 x LH.

Mesosoma (fig. 1): thorax more coriarius than frons. Pronotal disc 1.7 times longer than mesoscutum; notaulus distinct and complete, slightly wider and convergent behind; parapsidal furrows thin, absent anteriorly; scutellar groove relatively wide, arched, not dilated at the ends. Propodeal disc 1.14 times as long as wide, reticulate and with weak transversal striae anteriorly and coriarius behind, with a median carina distinct and complete and with a pair of discal carinae, very far from the median one, occupying the anterior half of the disc, lateral and posterior carinae well impressed, with a pair of sublateral carinae occupying the posterior half of the disc; declivity coriarius with thick median carina bifurcated below; lateral sides of propodeum very weak reticulate anteriorly and coriarius behind. Mesopleuron with a very large shallow foveae, occupying nearly all surface, opened behind, with a small rounded pit above (fig. 4). Forewing with three closed cells (fig. 5).

Gaster (figs. 6, 7): weakly coriarius, tergite I and posterior ring of the others polish; posterior margins of the tergites III-V weakly emarginate preceded by a very shallow groove (fig. 6); posterior margins of sternites IV-VI strongly biemarginate, forming a quadrate median lobe and a pair of rounded lateral lobes (fig. 7). Valvae hairy behind, sting well developed.

Remarks: *L. sulcata* differs from those from Chile and Australia by having wings fully developed, presence of notaulus, parapsidal furrows, scutellar groove and carinate propodeum. *L. sulcata* and *L. brasiliensis* are both macropterous. The former species has gastral sternites strongly emarginate, as the Chilean and Australian ones, while the latter is the only species with gastral sternites weakly emarginate.

Material examined. Holotype ♀, Paratype ♀, BRAZIL. Pará: Tucuruí (Rio Tocantins, base 4), 27.X-9.IX.1985, interception trap, N. Degalier col. (MPEG).

### ***Lepidosternopsis brasiliensis* (Evans, 1973) comb. n.**

*Nothepyrus brasiliensis* EVANS, 1973:203-204, figs. 5, 8-9, 11; GORDH & MOCZAR, 1990:135; AZEVEDO, 1992c:562-563.

I have reanalyzed the same specimens of *Nothepyrus brasiliensis* Evans, 1973 studied by AZEVEDO (1992c) and now I transfer to *Lepidosternopsis* based on the formerly discussion.

Material examined. BRAZIL. São Paulo: São Carlos (Canchim Farm, forest or savannah), 5♀ (DCBU).

*Alongatepyris platunissimus* Azevedo, 1992

This species was known only from the holotype of São Carlos, São Paulo, Brazil and now it is recorded for the first time to Paraná, Brazil. In this specimen, LH 1.09 x WH; WF 0.56 x WH; WF 1.12 x HE; WOT 1.67 x WOT; frontal carina lower; vertex with a median callus and corners more angled; line of small foveae of posterior margin of the pronotal disc slightly angled forward medially and the parapsidal furrows are more developed forward, absent only in the anterior fifth.

Material examined. BRAZIL. **Paraná:** Jundiá do Sul (Monte Verde Farm), 22.IX.1986, 1♀, Malaise trap, Profaupar survey (DZPR).

*Aspidepyris austrinus* Evans, 1967

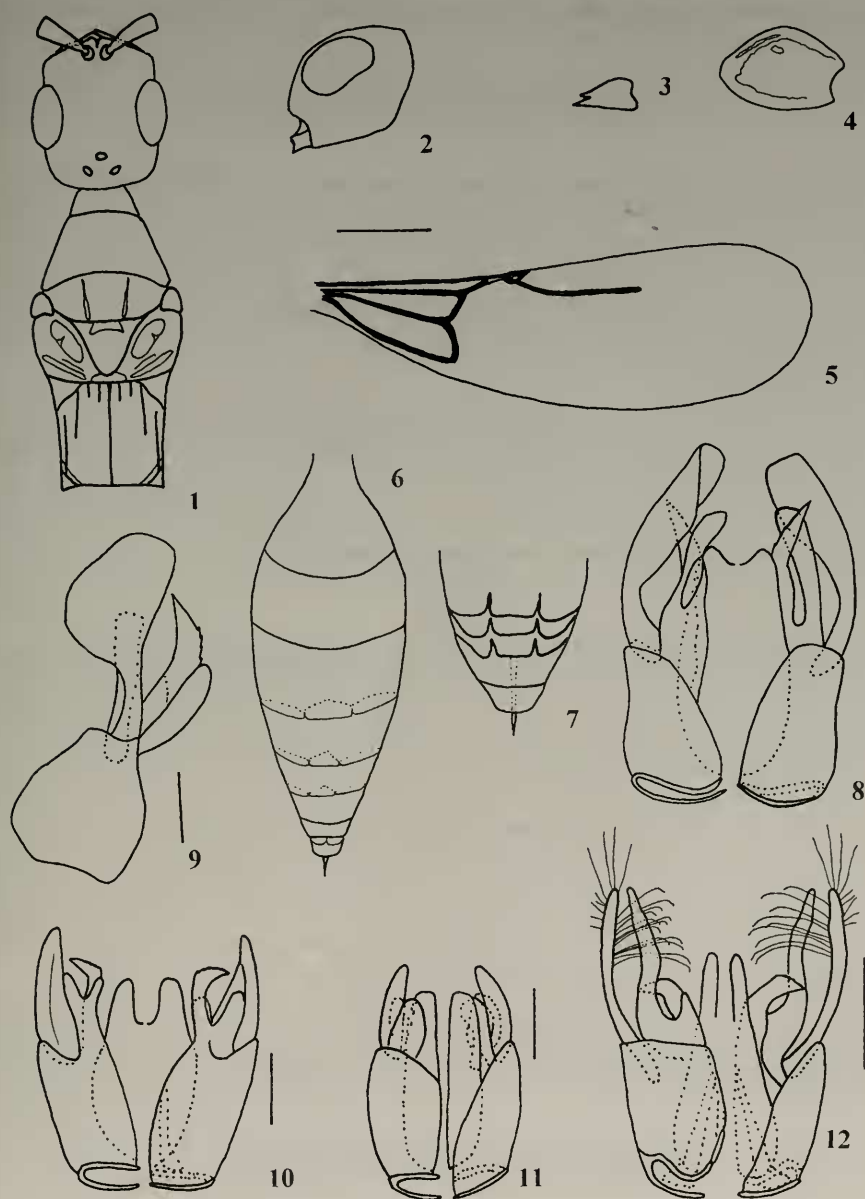
(Figs. 8-9)

*Aspidepyris* Evans, 1964 is restricted to America ranging from Honduras to Brazil. Up the present study only 4 specimens had been found, one of *A. foveolatus* Evans, 1964 (Honduras) and three of *A. austrinus* Evans, 1967 (Brazil, Mato Grosso and Bolivia). It is promptly recognized from the other genera of the tribe Epyrini by having the pronotal disc wider anteriorly than posteriorly, what is unique in Bethyilidae. *A. austrinus* is known only from the male and is from central region of South America, now it is recorded for the first time to Panama and Brazilian states of Amazonas, Espírito Santo, Rio de Janeiro, São Paulo and Paraná. In this series WH 0.91-1.16 x LH; WF 0.52-0.69 x WH; WF 1.03-1.38 x HE; OOL 1.9-1.07 x WOT; first four antennal segments in ratio of about 10:6:5:8; posterior fovea of mesopleuron can be larger than the anterior; propodeal disc 1.33 times as wide than long. Genitalia (figs. 8, 9): paramere extremely thin basally, apex rounded apical half wide dorsal margin slightly straight and ventral margin strongly concave; volsella with digitus with minute teeth at upper margin; cuspis laminar, with sides parallel, long, slightly shorter than paramere, apex rounded and arched inward; aedeagus very short, shorter than digitus, wider below the apex, inner margin slightly concave apically and straight basally, outer margin convex apically and concave below.

Material examined. PANAMA. Darien (along road in vicinity of El Real de Santa Maria), 1♂, V.1977, J. Bird col. (AMNH). ECUADOR. **Napo:** Limoncocha (250m), 3♂, 15-28.VI.1976, S. & J. Peck col. (CNCI, UFES). BRAZIL. **Amazonas:** Manaus (Reserve 1112 or 1113), 3♂, 26.II-1.X.1986, B. Klein col. (INPA), (Reserve Ducke or Campina), 3♂, 8.IV-17.VIII.1992, glue trap, Vidal & Vidal col. (INPA); **Espírito Santo:** Santa Teresa, 1♂, 13.I.1970, C. T. & C. Elias col. (DZPR), Cariacica (Biological Reserve of Duas Bocas), 19♂, 22.X.1996-1.VIII.1997, sweeping, C. O. Azevedo, E. H. Freitas & H. S. Sá col. (UFES), Guarapari, 1♂, IX.1960, M. Alvarenga col. (DZPR); **Rio de Janeiro:** Paineiras, 1♂, VIII.1961, M. Alvarenga col. (DZPR); **São Paulo:** São Carlos (Canchim Farm, forest), 1♂ (DCBU); **Paraná:** Foz de Iguaçu, 1♂, 7.XII.1966, Exp. Dept. Zoo col. (DZPR).

*Cephalonomia hyalinipennis* Ashmead, 1893

This species is widespread in the Americas and Europe, and now it is recorded for the first time to Brazil. In this series, body black with legs castaneous; length of body 1.37-1.65mm; LFW 1.87-2.00mm; WH 0.79-0.80 x LH; WF 0.55-0.58 x WH; WF 1.09-1.17 x HE; OOL 1.82-2.0 x WOT; propodeum disc 1.08-1.14 times as long as wide.



Figs. 1-12. 1-7: *Lepidosternopsis sulcata* sp.n. 1, head and mesosoma, dorsal; 2, head, lateral; 3, mandible, frontal; 4, mesopleuron, lateral; 5, forewing, dorsal; 6, gaster, dorsal; 7, gaster, ventral. 8-12. Male genitalia: 8-9. *Aspidopyris austrinus* 8, ventral, dorsal; 9, lateral; 10, *Plastanoxus laevis*; 11, *P. westwoodi*; 12, *Rhabdepyris viridissimus*. (Figs. 1-7, scale bar = 0.5mm; figs. 8-12, scale bars = 0.1mm).



Material examined. BRAZIL. **São Paulo**: São Carlos (Canchim Farm, forest), 2♀, 28.VIII.1988, Malaise trap, L. A. Joaquim col. (DCBU).

***Cephalonomia tarsalis* (Ashmead, 1893)**

This is a cosmopolitan species which attacks a lot species of Coleoptera of stored grain (EVANS, 1964). The females are generally longer than males, in this series length 2.13-1.86mm; LFW 1mm; WH 1.0 x LH; WF 0.66-0.65 x WH; WF 0.66-0.64 x HE; OOL 1.38-1.7 x WOT; propodeum disc 1.05-1.22 times as long as wide; length of pronotal disc, mesoscutum and scutellum in ratio of about 8:4:4. The males have head strongly convergent behind. In this series length 1.5-1.75mm; LFW 1.0mm; WH 1.5-1.04 x LH; WF 1.44-1.53 x WH; WF 1.3-1.8 x HE; OOL 1.25-1.56 x WOT; propodeum disc 1.0 times as long as wide.

Material examined: BRAZIL. **São Paulo**: São Carlos (reared in laboratory on Tenebrionidae (Coleoptera) larvae), 2♀, 4♂, 1990 (DCBU).

***Plastanoxus laevis* (Ashmead, 1893)**

(Fig. 10)

The species is widespread in the Americas, but in Brazil was known only from Santa Catarina. Now, it is recorded for the first time to São Paulo. The sexual dimorphism of this species is conspicuous in the head. In female, the vertex is straight with corners slightly angled, temple slightly parallel, eye placed forward and malar space and gena shortly projected forward. In males, the vertex is straight only medially with corners broadly rounded, temple diverging, eye placed medially at the sides and stout, head much developed behind the eye. In this series, male with WH 1.08-1.15 x LH; WF 0.64-0.66 x WH; WF 1.41-1.47 x HE; WOT 0.74-0.9 x OOL; VOL 0.34-0.43 x HE; and female with LH 1.0 x WH; WF 0.66 x WH; WF 1.39-1.44 x HE; WOT 0.65-0.7 x OOL; VOL 0.55-0.61 x HE. Male genitalia (fig. 10): paramere wide basally, narrowing gradually, apex angled; cuspis with small and rounded inner lobe, outer lobe laminar, wide and rounded; aedeagus stout wider medially, apex with a pair of rounded lobes.

Material examined. BRAZIL. **São Paulo**: Jaguariúna (Embrapa, on grass), 7♂, 2♀, 24-27.VIII.1992, sweeping, C. O. Azevedo col. (UFES); Ibitinga (rubber-tree crop), 1♂, 1♀ (in bad condition), 17.V-12.VII.1989, Möricke trap (UFES); **Santa Catarina**: Nova Teutônia (300-500m), 1♂, IX-X.1971, F. Plaumann col. (CNCI).

***Plastanoxus westwoodi* (Kieffer, 1914)**

(Fig. 11)

The species is probably cosmopolite (EVANS, 1964) and now it is recorded for the first time to Brazil. The sexual dimorphism of this species follows the pattern of *P. laevis*. In this series, females have length 1.75-1.76mm; LH 1.31-1.34 x WH; WF 0.57 x WH;

WF 1.87 x HE; WOT 0.53-0.54 x OOL; VOL 0.77-0.8 x HE. Males have length 1.6mm; LH 1.1 x WH; WF 0.6 x WH; WF 2.07 x HE; WOT 0.85 x OOL; VOL 0.46 x HE. Male genitalia (fig. 11): paramere wide, slightly longer than wide; cuspis with inner lobe rounded and small, outer lobe very wide, with apex wide and truncate with rounded corners; aedeagus with a pair of apical lobe, with rounded apex, slightly higher than cuspis.

Material examined. BRAZIL. **Rio Grande do Sul**: 6♀, 1♂, stored grain (UFES).

***Rhabdepyris viridissimus* (Kieffer, 1911)**

(Fig. 12)

This species is known to Mexico (Sinaloa, Vera Cruz, Tabasco) and Guatemala, and now is recorded for the first time to Belize. WH 1.11-1.14 x LH; WF 0.68 x WH; WF 1.36-1.46 x HE; OOL 1.0-1.16 x WOT. Male genitalia (fig. 12): paramere elongate, apex thin and rounded with ventral corner somewhat angulate, dorsal margin slightly concave and ventral margin straight, apical area of inner surface with many long setae directed inward; volsella with cuspis sinuous, very long and thin, as long as paramere; aedeagus bottle-shaped, apex with a small median invagination; apodema strongly angled outward basally.

The pubescence of the paramere of this species is very peculiar for the genus. The pattern of *Rhabdepyris* is paramere with hairs at margins and here the hairs are in the inner surface of paramere.

Material examined. BELIZE. Middlesex (125m), 8♂, 18.III-7.IV.1965, E. C. Welling col. (CNCI).

***Rhabdepyris surinamensis* (Evans, 1969) comb. n.**

*Epyris surinamensis* EVANS, 1969, figs. 131, 135-136; GORDH & MOCZAR, 1990.

This species was known only from the type series from Surinam and Bolivia. Now, it is recorded for the first time to Brazil (Mato Grosso and São Paulo). According EVANS (1969), the similarity of sculpture of mesopleuron and scutellum of this species and them of the genus suggests *Rhabdepyris* was a result of convergence. However, the species resembles *Rhabdepyris* in the pattern of carinae of propodeum and it is better placed in *Rhabdepyris* than *Epyris*.

In this series, WH 0.93-0.98 x LH; WF 0.67-0.7 x WH; WF 1.64-1.75 x HE; OOL 2.17-2.32 x WOT; vertex slightly concave; propodeal disc 1.37-1.43 X as wide as long.

Material examined. BRAZIL. **Mato Grosso**: Rondonópolis (Indian Reserve of Tadarimana), 3♀, 28.VIII-4.IX.1990, M. T. Tavares col. (UFES); **São Paulo**: Ibatinga (rubber-tree crop), 27♀, 20.viii.1987-9.viii.1989 (UFES).

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## REFERENCES

- AZEVEDO, C. O. 1991. Espécie nova e notas sobre *Bakeriella* Kieffer (Hymenoptera, Bethylidae) da região de São Carlos, SP. **Revta bras. Ent.**, São Paulo, **35**(3):535-538.
- . 1992a. On *Rhabdepyris* Kieffer (Hymenoptera, Bethylidae) in the area of São Carlos: I. Subgenus *Rhabdepyris* (*Rhabdepyris*). **Revta bras. Ent.**, São Paulo, **36**(1):241-244.
- . 1992b. Sobre os *Rhabdepyris* Kieffer (Hymenoptera, Bethylidae) coletados em Piçarras, SC, Brasil. **Revta bras. Ent.**, São Paulo, **36**(2):251-254.
- . 1992c. Sobre os Sclerodermini (Hymenoptera, Bethylidae, Epyrinae) da região de São Carlos, São Paulo, Brasil. **Revta bras. Ent.**, São Paulo, **36**(3):561-567.
- . 1993. On *Rhabdepyris* Kieffer (Hymenoptera, Bethylidae) in the area of São Carlos, State of São Paulo, Brazil: II. Subgenus *Trichotepyrus*. **Revta bras. Ent.**, São Paulo, **37**(2):305-308.
- . 1994. Descriptions of two new species and notes on *Bakeriella* Kieffer (Hymenoptera, Bethylidae) from Ecuador and Brazil. **Jour. Hym. Res.**, Washington, **3**(1):145-150.
- . 1996. Descrição de uma espécie nova de *Calyozina* Enderlein (Hymenoptera, Bethylidae) do Brasil. **Revta bras. Zool.**, Curitiba, **13**(4):923-927.
- EVANS, H. E. 1964. A Synopsis of the (Hymenoptera: Aculeata). **Bull. Mus. comp. Zool.**, Cambridge, Mass., **132**(1): 1-222.
- . 1969. A revision of the genus *Epyris* in the Americas (Hymenoptera, Bethylidae). **Trans. Am. ent. Soc.**, Philadelphia, **95**(2):181-352.
- . 1973. Further studies on South American Bethylidae (Hymenoptera). **Proc. ent. Soc. Wash.**, Washington **75**(2):194-204.
- GORDH, G. & MOCZAR, L. 1990. A catalog of the world Bethylidae (Hymenoptera). **Mem. Am. ent. Inst.**, Gainesville, **46**:1-364.
- HARRIS, R. A. 1979. A glossary of surface sculpturing. **Occas. Pap. Ent.**, Sacramento, **28**:1-31.
- OGLOBLIN, A. 1953. Los insectos de las Islas Juan Fernandez. 14. Bethylidae y Dryinidae (Hymenoptera). **Revta chil. Ent.**, Santiago, **3**:101-115.
- TERAYAMA, M. 1995. The phylogeny of the bethylid wasp tribe Sclerodermini (Hymenoptera, Bethylidae). **Proc. jap. Soc. Syst. Zool.**, Tokyo, **54**:65-73.